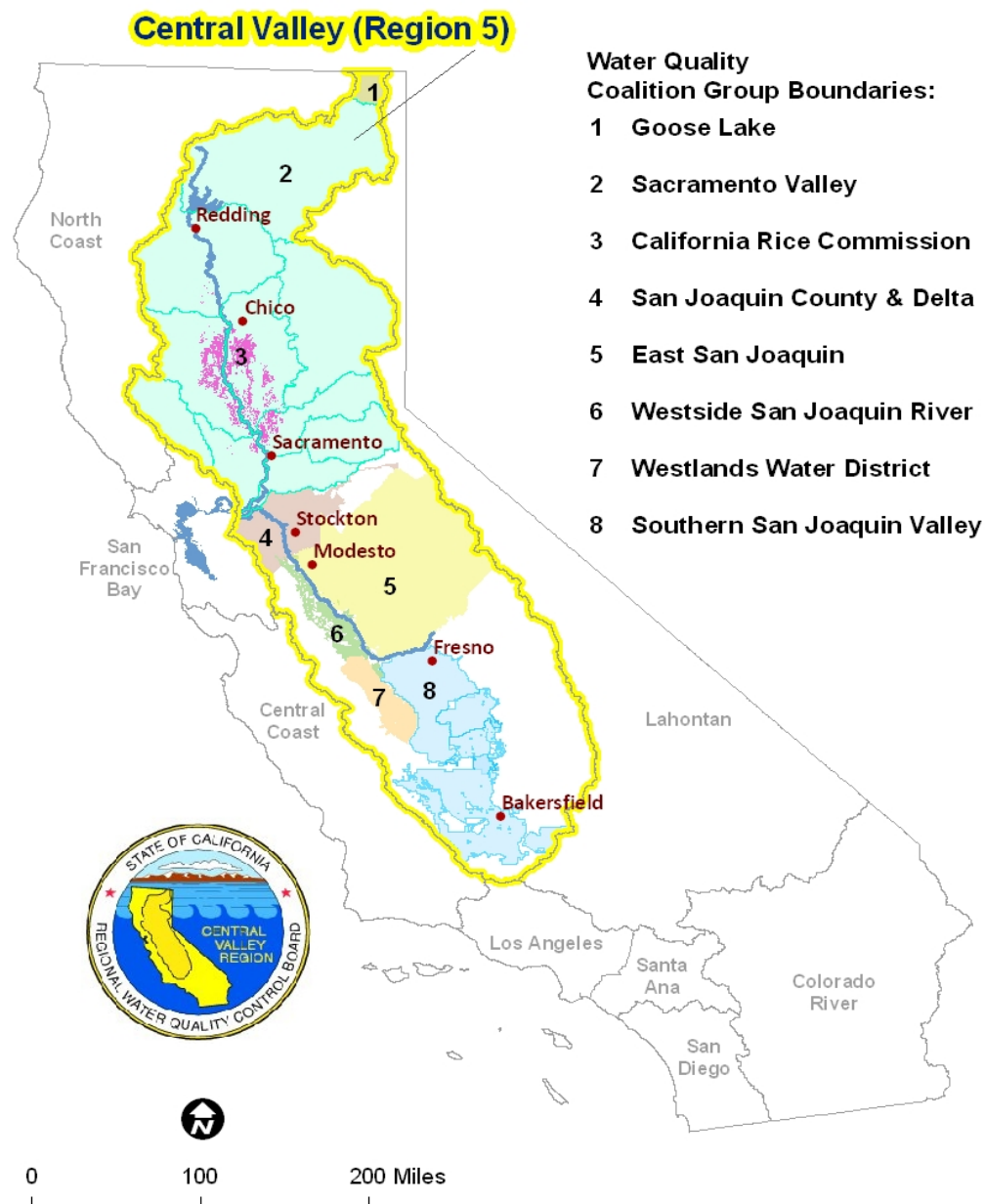


Long-term ILRP Development Summary Central Valley Water Board, September 2010

Background

In 2003, the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) initiated a new irrigated lands regulatory program (ILRP) by adopting a conditional waiver of waste discharge requirements (WDRs) for discharges from irrigated agricultural lands. The ILRP's requirements were designed to reduce wastes discharged from irrigated agricultural sites to Central Valley surface waters (e.g., tailwater, runoff from fields, subsurface drains). Figure 1 shows the Central Valley Water Board boundaries and locations of water quality coalitions that have formed under the current ILRP.

Figure 1. Central Valley Water Board and Water Quality Coalition Boundaries



The 2003 waiver program was set to expire in 2006, at which time the Central Valley Water Board adopted a new conditional waiver for discharges from irrigated agricultural lands that continues the 2003 program until 2011.

As part of the 2003 and 2006 waiver programs, the Central Valley Water Board directed staff to prepare an environmental impact report (EIR) for a long-term ILRP that would protect State waters from irrigated agricultural waste discharges. Although the requirements of the current ILRP are aimed to protect surface water bodies only, the directive to develop a long-term program and EIR is not as explicit, as “State” waters include ground and surface waters within the State ([California Water Code, Section 13050\[e\]](#)).

Under the current ILRP, water quality coalitions¹ and irrigated agricultural operations have sampled surface waters for agricultural waste constituents and developed and implemented water quality management plans to work toward solving water quality problems. Figure 2 summarizes areas within the Central Valley where water quality management plans have been, or are being developed to address water quality problems associated with irrigated agricultural operations. Also, in December 2008, the Central Valley Water Board finalized an Existing Conditions Report (ECR) for Central Valley agricultural lands. The ECR was developed to establish baseline conditions for estimating potential environmental and economic effects of the long-term ILRP. Data collected under the current ILRP and the ECR have been used in the development of the long-term ILRP.

General Context for the Preferred ILRP Alternative

Virtually all Water Board regulatory programs rely on the same fundamental activities: (1) monitoring, (2) assessment, (3) planning, and (4) implementation. These activities are related and often iterative. Broadly speaking, monitoring involves the collection of data that allows stakeholders and the Board to assess whether the objectives of the regulatory program are being achieved. Based on the assessment of the data, plans are developed or adjusted to address any identified water quality issues. Alternatively, the information from the assessment may lead to a conclusion that no changes are needed. Finally, any plan that is developed must be implemented with adequate monitoring or feedback mechanisms to ensure the planned activities are being carried out.

The monitoring, assessment, planning, and implementation activities are considered in the context of the water quality issues that must be addressed. For certain areas and crops, available information may indicate:

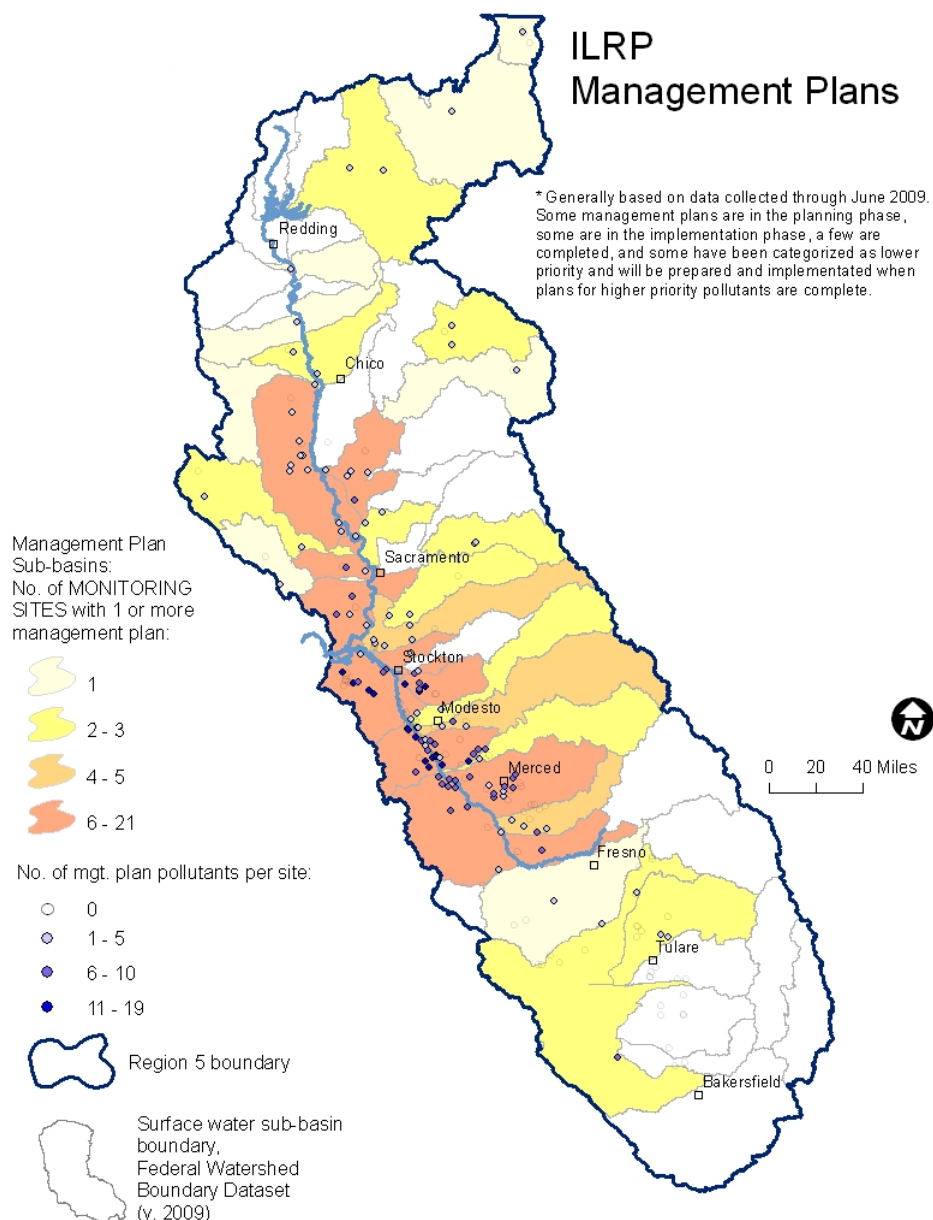
1. no or limited effects of agricultural discharge on water quality;
2. clear relationships between discharge and water quality problems; or
3. uncertainty as to whether irrigated agriculture is contributing to an identified problem (e.g., agricultural waste discharges are often commingled, either in a shared drainage conveyance or shared groundwater aquifer. This commingling of discharge makes it more difficult to determine whether specific irrigated agricultural operations are contributing to a water quality problem or

¹ Water quality coalition groups have formed throughout the Central Valley to function as representative or “lead” entities in the administration of the current ILRP. Coalitions represent irrigated agricultural operations, provide education, organize monitoring, and work with the Central Valley Water Board to help ensure that the current program is effectively implemented.

whether there is a general practice used by all operations that must be changed to improve water quality).

Each of these circumstances suggests a different regulatory approach—limited requirements in the first instance; a focus on implementing appropriate practices to correct the water quality problem in the second instance; and a focus on additional investigation in the third instance.

Figure 2. ILRP Management Plans



In developing the preferred alternative (or “recommended alternative”), Water Board staff are mindful that there is a balancing of costs associated with a new regulatory program. A more stringent regulatory program may increase the likelihood of improving and protecting water quality, but the cost of compliance for regulated entities and the State to oversee the program can be overly

burdensome. The California Water Code (CWC) requires that costs be considered when developing programs for agriculture. Given that agricultural operators are price takers in the market and cannot directly pass on their costs to consumers, these costs become especially important. Conversely, a regulatory program that is lax or allows too much time for compliance can lead to an exacerbation of water quality problems and prolonged impacts on beneficial uses.

To assist the Central Valley Water Board in trying to strike the appropriate balance, a Stakeholder Advisory Workgroup was formed. The Workgroup included representatives from local, State, and federal agencies, agricultural interests, water suppliers, environmental/ environmental justice groups, and other interested parties. Over the course of 9 months (December 2008–August 2009), the Advisory Workgroup came to consensus on the goals and objectives of the program and the five alternatives that should be considered and analyzed.

The goals are summarized as follows:

- Restore and/or maintain the highest reasonable quality of State waters, considering all demands being placed on the water,
- Minimize waste discharge from irrigated agricultural lands that could degrade the quality of State waters,
- Maintain the economic viability of agriculture in California's Central Valley, and
- Ensure that irrigated agricultural discharges do not impair access to safe and reliable drinking water.

The objectives are summarized as follows:

- Restore and/or maintain beneficial uses by ensuring that all State waters meet applicable water quality objectives,
- Encourage implementation of management practices that improve water quality,
- Provide incentives for agricultural operations to minimize waste discharges to State waters,
- Promote coordination with other regulatory and non-regulatory programs to minimize duplicative regulatory oversight while ensuring program effectiveness.

The five programmatic alternatives are summarized as follows:

- Alternative 1: "no change," continue the current ILRP with coalition lead, regional water quality monitoring
- Alternative 2: current ILRP approach, coalition lead, with groundwater quality management requirements and regional monitoring
- Alternative 3: Central Valley Water Board lead, surface and groundwater quality management requirements, individual farm plan development with no regular water quality monitoring
- Alternative 4: Central Valley Water Board lead, surface and groundwater quality management requirements, individual farm plan development with individual or regional water quality monitoring
- Alternative 5: Central Valley Water Board lead, surface and groundwater quality management requirements, surface and groundwater quality monitoring, individual farm plan development with individual monitoring

At the request of the Advisory Workgroup, Water Board staff developed a “straw proposal” based on an initial review of the five alternatives and staff’s review of existing Water Board regulatory programs that address irrigated agriculture or are structured to deal with a large group of waste dischargers. In April and May 2010, staff reviewed the straw proposal with stakeholders. Stakeholders were generally supportive of the straw proposal. The elements of the straw proposal that received stakeholder support; the concerns expressed; and the environmental impacts (Draft PIER), economic analysis, and policy analysis described below all were considered in developing the recommended alternative.

The five programmatic alternatives have been evaluated against the long-term ILRP goals and objectives and State policy and law and considered in a Draft PEIR² and Draft ILRP Economics Report (economics report).³ The results of the evaluation have been used to identify the elements of each alternative that best achieve the evaluation measures (e.g., goals and objectives, policy, environmental impacts, cost). These elements have been combined to create the recommended long-term ILRP summarized below.

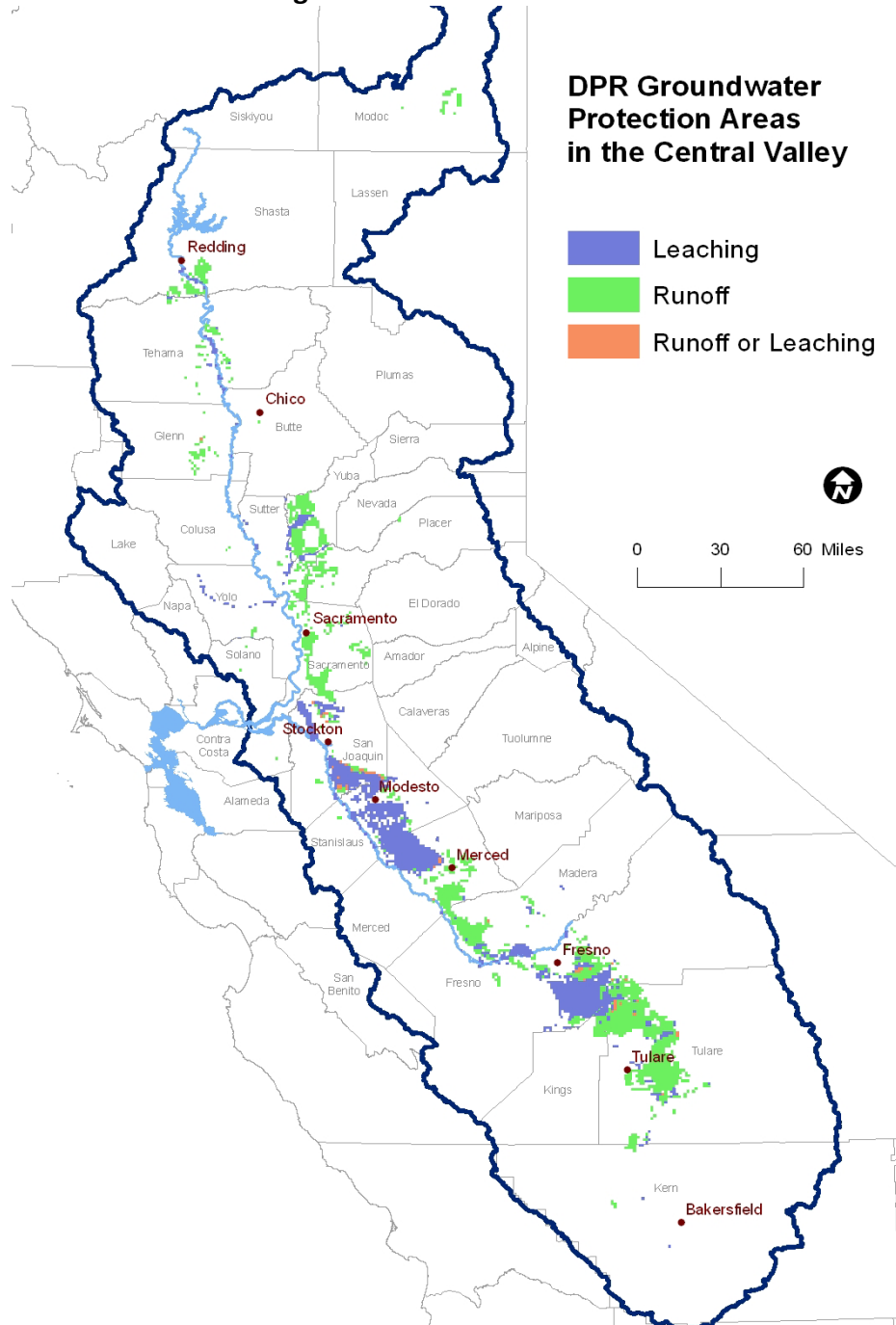
- **Scope:** primary change from existing ILRP – discharge to groundwater included. Greenhouses and operational spills (i.e. associated with supplying water) are included in the current program, but are now dropped for the recommended program.
- **Goals and Objectives:** same as those developed by the Stakeholder Advisory Workgroup.
- **Administration:** third-party lead, or coalition groups.
- **Implementation Mechanism:** 8-12 geographically or commodity-based waivers and/or waste discharge requirements (orders). Growers not enrolled under one of the 8-12 orders would obtain regulatory coverage under an individual order.
- **Timeframe for Implementation:** provides time to adopt the orders associated with the program and enroll growers who had not been in the program.
- **Prioritized Regulatory Requirements:** the following factors would guide the prioritization (e.g., high or low) for a given area - exceedances of water quality objectives and/or degradation of water quality; located in a high-threat area based on environmental conditions (e.g., Department of Pesticide Regulation/ State Water Board groundwater vulnerability area (see Figure 3); intensity of operations, geology, proximity to surface water bodies, or an area with shallow groundwater; management practices in place to protect water quality; and demonstrated non-compliance with the ILRP.
 - Tier 1 (low-priority areas): describe management objectives to be achieved, report on management practices implemented, and assessment of water quality every 5 years.
 - Tier 2 (high-priority areas): develop and implement ground and/or surface water quality management plan to address the water quality problem in the aquifer and/or surface water, report on management practices and monitoring results annually.

² *Draft Irrigated Lands Regulatory Program, Program Environmental Impact Report* (ICF International 2010) (Draft PEIR)

³ ICF International 2010, *Draft Technical Memorandum Concerning the Economic Analysis of the Irrigated Lands Regulatory Program* (Draft ILRP Economics Report).

- Optional Individual Certified Farm Water Quality Management Plan (FWQMP): an individual farm opting to implement a certified FWQMP would be on-farm certified (by an approved certifier) as having implemented practices to control waste discharge to State waters, and thus would be considered lower priority.
- **Time Schedule for Compliance:** priorities are established for addressing surface and ground water quality problems. Time frame for compliance with objectives for high priority issues is five to ten years for surface waters. Demonstrated improvement within five to ten years is required for groundwater issues.

Figure 3. Department of Pesticide Regulation Groundwater Protection Areas



Key Findings of Programmatic Environmental Impact Report

In general, potential environmental impacts of long-term ILRP alternatives are associated with implementation (i.e., construction and operation) of water quality management practices and construction of monitoring wells. In developing the Draft PEIR, the Central Valley Water Board has assumed that irrigated agricultural operations would implement management practices in areas throughout the region to address water quality concerns. The management practices analyzed, as shown below, are not a mandatory part of any alternative but are identified in the Draft ILRP Economics Report as practices likely to be implemented to meet water quality and other management goals on irrigated lands, including fields, managed wetlands, and nurseries. The analyzed management practices are representative of those most likely to have environmental impacts.

For both environmental and economic analyses, seven suites of management practices were considered: 1) nutrient management; 2) irrigation water management; 3) tailwater recovery system; 4) pressurized irrigation system; 5) cover crop; 6) buffer strip-sediment trap; 7) abandoned well protection.

Potential significant environmental impacts could occur in the following resource areas from anticipated responses to the regulatory program.

- Impacts that can be mitigated: Cultural resources; Noise; Air Quality; Vegetation and Wildlife; Fisheries
- Impacts that cannot be mitigated: Climate change; Agricultural resources

Mitigation of the impacts would be incorporated into the ILRP general order: 1) grower should choose a practice/location that will not impact a sensitive resource; 2) if such a practice/location is chosen, then the grower must implement mitigation measures identified in PEIR; 3) if grower is not able to apply PEIR mitigation measure, then an individual WDR with site-specific CEQA would be required.

Key Findings of Economic Analysis

There are three components to the economic analysis: 1) cost estimate; 2) impact of cost on production; 3) impact of cost/production changes on regional economy.

Estimated total annual costs for each alternative are summarized in Table 1 (from Tables 2-18 through 2-22 of the economics report). As discussed below, the cost estimates generally assume aggressive and extensive implementation of control measures, which may not be required to protect water quality. Although the cost estimates are likely high, they provide a good basis for comparing the costs of the alternatives.

Most of the costs for the alternatives are attributable to the estimated cost of implementing management practices. In Alternatives 1, 2, 4, and the recommended ILRP, the estimated costs for implementing management practices are more than 90 percent of the total costs. In Alternatives 3

and 5, the estimated costs for implementing management practices are 82 and 72 percent of the total costs, respectively.

Table 1. Summary of Average Estimated Annualized Costs (\$000,000) by Alternative

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Recommended ILRP
Total administration (planning, etc.)	5.4	6.5	70	20	67	6.5
Monitoring	6.8	10.6	35	23	302	17.3
Management practices	466	468	468	468	952	468
Total	478	485	574	511	1,321	492
Percent Change from Alternative 1	0	1.4	20	7	176	2.9
Source: Irrigated Lands Regulatory Program Economics Report						
Totals may not exactly equal the sum of individual cost categories as a result of rounding.						

Because the ILRP would not specify a set of required management practices, estimating the costs of management practices for the long-term ILRP is complex and imprecise. The CWC, in fact, prohibits the Water Board from specifying the manner of compliance with water quality requirements [Section 13360]. As a consequence, the Central Valley Water Board had to make a set of assumptions about the types of water quality management practices that irrigated agricultural operations would likely implement to solve existing water quality problems. For example, in areas with multiple surface water quality problems, it is assumed that aggressive source control measures (e.g., pressurized irrigation, tailwater return) would be implemented. It is unknown, however, whether the assumed types of practices actually would be needed. To illustrate how this uncertainty may affect the economic analysis, Appendix A of the economics report indicates that estimated costs for pasture lands would be reduced by 61 percent if tailwater return systems were not implemented—as assumed in the current cost scenario.

As shown in Table 1, the estimated costs associated with Alternatives 1, 2, 4, and the recommended ILRP are similar (less than 10 percent difference between them). Costs associated with Alternative 3 would be higher than Alternative 1 by approximately 20 percent. Much of the additional cost in Alternative 3 is attributable to increased administration costs associated with the Central Valley Water Board administration and certification of individual water quality plans. Alternative 5 costs are estimated to be much higher (about 176 percent) than those under the current program, primarily because of individual monitoring costs and mandated certified nutrient management.

The recommended ILRP contains the third-party lead entity structure, regional surface and groundwater management planning, and regional surface water quality monitoring approach similar to Alternative 2; management practices tracking and regional groundwater monitoring similar to Alternative 4; and a tiering system based on systems described by Alternatives 2 (watershed or area management objectives plan) and 4 (pesticide and nutrient use). Therefore, overall potential costs of the recommended ILRP are estimated using the costs for these components of Alternatives 2 and 4 given in Tables 2-19 and 2-21 of the economics report. Estimated costs of management practices implementation are equal for Alternatives 2–4. The total estimated cost of the recommended ILRP,

492 million dollars per year, is greater than Alternative 2 (485 million dollars per year) but less than Alternative 4 (511 million dollars per year) and is 2.9 percent greater than Alternative 1 (see Table 1 for estimated costs of each alternative).

For irrigated agricultural operations, the changes in value of production and agricultural sector jobs are summarized in Tables 2 and 3. Each of the tables represent changes as compared with full implementation of Alternative 1. Alternative 1 projects an annual loss of \$336 million in total value of production, and a loss of 2299 agricultural sector jobs.

As shown in the tables, the changes for irrigated agricultural operations follows the same pattern as cost (see summary Table 2) -- where the recommended ILRP is anticipated to be bracketed between Alternatives 2 and 4. Changes in the regional economy as reflected by change in jobs: alternative 4<alternative 1<alternative 2< alternative 3< alternative 5 --where the recommended ILRP is anticipated to be bracketed between Alternatives 2 and 4 (see summary Table 3).

Table 2. Summary of Changes in Total Value of Production (\$000,000) by Basin from Alternative 1

Basin	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Recommended ILRP
Sacramento River	-1.3	-18.3	-4.5	-118.4	
Percent Change	-0.0%	-0.6%	-0.1%	-3.6%	
San Joaquin River	-5.5	-19.2	-9.2	-108.1	
Percent Change	-0.2%	-0.6%	-0.3%	-3.2%	
Tulare Lake	-0.6	-3.3	-1.2	-42.2	
Percent Change	-0.0%	-0.1%	-0.0%	-0.7%	
Total	-7.4	-40.9	-14.9	-268.7	-7.4 to -14.9
Percent Change	-0.1%	-0.3%	-0.1%	-2.1%	-0.1%

Source: Irrigated Lands Regulatory Program Economics Report
Totals may not sum as a result of rounding.

Table 3. Summary of Changes in Agriculture Sector Jobs by Basin from Alternative 1

Basin	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Recommended ILRP
Sacramento River	-10	-108	9	-880	
San Joaquin River	-43	-98	-26	-714	
Tulare Lake	-5	7	26	-34	
Total	-58	-199	9	-1628	-58 to 9

Source: Irrigated Lands Regulatory Program Economics Report
Represents net impacts on jobs (full- and part-time, as compared with full implementation of Alternative 1) in agricultural sectors resulting from changes in agricultural production and compliance-related spending.

Providing Comments

During the July 28–September 27, 2010, long-term ILRP Draft PEIR comment period, interested stakeholders are encouraged to provide written comments on the Draft PEIR and the economics report. To facilitate a timely and accurate response to comments received, the Central Valley Water Board requests that written comments include (1) a heading indicating the page/ section of report the comment is addressing, (2) a summary of comment/ recommended change, and (3) any

discussion supporting the comment/ recommended change. The Central Valley Water Board prefers that comments be submitted electronically to the following email address: ILRPcomments@icfi.com.

If email is unavailable, written comments should be provided to:

ILRP Comments
Ms. Megan Smith
ICF International
630 K Street, Suite 400
Sacramento, CA 95814
Fax: (916) 456-6724

Next Steps

Stakeholder comments will be considered during the development of a final recommended long-term ILRP and Final PEIR. The final recommended ILRP and PEIR will be released in early 2011 prior to Central Valley Water Board consideration no later than March 31, 2011. Orders to implement the long-term ILRP will be developed for Board consideration during the year following Board certification of the PEIR.

Any questions regarding the long-term ILRP should be directed to Adam Laputz at (916) 464-4848 or awlaputz@waterboards.ca.gov.